

Title (en)

CLOSED LOOP FEEDBACK CONTROL OF MOTOR VELOCITY OF A SURGICAL STAPLING AND CUTTING INSTRUMENT BASED ON MEASURED TIME OVER A SPECIFIED NUMBER OF SHAFT ROTATIONS

Title (de)

REGELKREISRÜCKMELDUNGSSTEUERUNG DER MOTORDREHZAHL EINES CHIRURGISCHEN KLAMMER- UND SCHNEIDINSTRUMENTS AUF BASIS DER GEMESSENEN ZEIT ÜBER EINE BESTIMMTE ANZAHL AN WELLENUMDREHUNGEN

Title (fr)

COMMANDE DE RÉTROACTION EN BOUCLE FERMÉE DE LA VITESSE D'UN MOTEUR D'UN INSTRUMENT DE DÉCOUPE ET D'AGRAFAGE CHIRURGICAL SUR LA BASE DE LA DURÉE MESURÉE SUR UN NOMBRE SPÉCIFIÉ DE ROTATIONS D'ARBRE

Publication

EP 3417808 A1 20181226 (EN)

Application

EP 17209624 A 20171221

Priority

US 201715628072 A 20170620

Abstract (en)

A motorized surgical instrument is disclosed. The surgical instrument includes a displacement member configured to translate over a plurality of predefined zones. A motor comprising a shaft is coupled to the displacement member. A control circuit is coupled to the motor. A position sensor is coupled to the control circuit to monitor the rotation of the shaft. A timer circuit is coupled to the control circuit. The control circuit is configured to receive rotations of the shaft in a current zone defined by a set rotation interval, measure time at a set position of the rotation interval, wherein the measured time is defined as the time taken by the displacement member to traverse the rotation interval based on a predetermined number of shaft rotations, and set a command velocity of the displacement member for a subsequent zone based on the measured time in the current predefined zone.

IPC 8 full level

A61B 17/072 (2006.01); **A61B 90/00** (2016.01); **A61B 17/00** (2006.01)

CPC (source: EP US)

A61B 17/07207 (2013.01 - EP US); **A61B 17/105** (2013.01 - US); **A61B 90/03** (2016.02 - EP US); **A61B 17/068** (2013.01 - US); **A61B 17/072** (2013.01 - US); **A61B 2017/00017** (2013.01 - EP US); **A61B 2017/00022** (2013.01 - EP US); **A61B 2017/00075** (2013.01 - EP US); **A61B 2017/00119** (2013.01 - EP US); **A61B 2017/00123** (2013.01 - EP US); **A61B 2017/00132** (2013.01 - EP US); **A61B 2017/00389** (2013.01 - US); **A61B 2017/00398** (2013.01 - EP US); **A61B 2017/0046** (2013.01 - EP US); **A61B 2017/00473** (2013.01 - US); **A61B 2017/00477** (2013.01 - US); **A61B 2017/00734** (2013.01 - EP US); **A61B 2017/07271** (2013.01 - US); **A61B 2017/07278** (2013.01 - US); **A61B 2017/07285** (2013.01 - EP US); **A61B 2017/2927** (2013.01 - EP US); **A61B 2090/031** (2016.02 - EP US); **A61B 2090/067** (2016.02 - EP US)

Citation (applicant)

- US 9072535 B2 20150707 - SHELTON IV FREDERICK E [US], et al
- US 2014263541 A1 20140918 - LEIMBACH RICHARD L [US], et al
- US 2014263551 A1 20140918 - HALL STEVEN G [US], et al
- US 2014263552 A1 20140918 - HALL STEVEN G [US], et al
- US 201615130590 A 20160415
- US 8210411 B2 20120703 - YATES DAVID C [US], et al
- US 7845537 B2 20101207 - SHELTON IV FREDERICK E [US], et al

Citation (search report)

- [X] AU 2012203035 A1 20120614 - TYCO HEALTHCARE
- [X] US 2016256153 A1 20160908 - SHELTON IV FREDERICK E [US], et al
- [XI] EP 2772207 A2 20140903 - ETHICON ENDO SURGERY INC [US]
- [X] EP 2324776 A2 20110525 - TYCO HEALTHCARE [US]
- [A] EP 2777538 A2 20140917 - ETHICON ENDO SURGERY INC [US]

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)

BA ME

DOCDB simple family (publication)

EP 3417808 A1 20181226; **EP 3417808 B1 20231206**; **EP 3417808 C0 20231206**; BR 112019027223 A2 20200707; CN 110809440 A 20200218; CN 110809440 B 20230505; JP 2020524050 A 20200813; JP 7139366 B2 20220920; US 10980537 B2 20210420; US 2018360454 A1 20181220; WO 2018234892 A1 20181227

DOCDB simple family (application)

EP 17209624 A 20171221; BR 112019027223 A 20180517; CN 201880041820 A 20180517; IB 2018053493 W 20180517; JP 2019570474 A 20180517; US 201715628072 A 20170620